GIS Map Viewer Tutorial Version 4.0

About this Document

This document is divided into sections that describe the tools and functions available to The Network for a Healthy California, (***The Network***) GIS Map Viewer users, including walkthroughs of two **Real Life Scenarios** that show you step-by-step how to use some of the GIS Viewer tools. To navigate through this document, use the bookmarks to the left or the underlined links found in the text. The most recent version of this document can be found **here**.

Introduction

Geographic Information Systems (GIS) are powerful tools for assisting in data integration and planning. GIS brings together the functionality of computerized databases and the output of geographic-based information. In the field of public health, GIS can assist us in answering such questions as:

1. What is the demographic composition in neighborhood X?

   ***The Network* GIS Example:** What is the proportion of African Americans in your outreach area (by census tract), whose income levels are less than 130% of the Federal Poverty Level (2000)?

2. How many and what types of assets are available in neighborhood X?

   ***The Network* GIS Example:** In your outreach area, how many different types of food retailers are there and how many of each exist?

3. What are the spatial patterns and trends of a particular indicator in neighborhood X and how does this compare to the rest of California or another region?

   ***The Network* GIS Example:** How does your outreach area compare to your Regional Network (RN) in regards to the number of census tracts that have greater than or equal to 50% of the population (all races) whose incomes are less than 185% of the Federal Poverty Level (2000)?

In order to properly plan, manage and monitor any public health program, it is vital that up-to-date, relevant information is available to decision-makers at all levels of the public health system. As every disease problem or health event requires a different response and policy decision, information must be available that reflects a realistic assessment of the situation at local, national and global levels. This must be done with the best available data and by taking into consideration demographics, availability of and accessibility to existing health and social services as well as other geographic and environmental features.

The Network recognizes that GIS provides an ideal platform for its program staff and partnering organizations to fulfill their obligations to the communities they serve by giving them a tool that provides comprehensive information for the targeting of program-specific objectives and analysis in relation to: specific neighborhood areas; surrounding social and health services; and the natural environment. ***The Network*** GIS allows users to easily visualize these targeted catchments and communicate this information to the appropriate decision-makers.

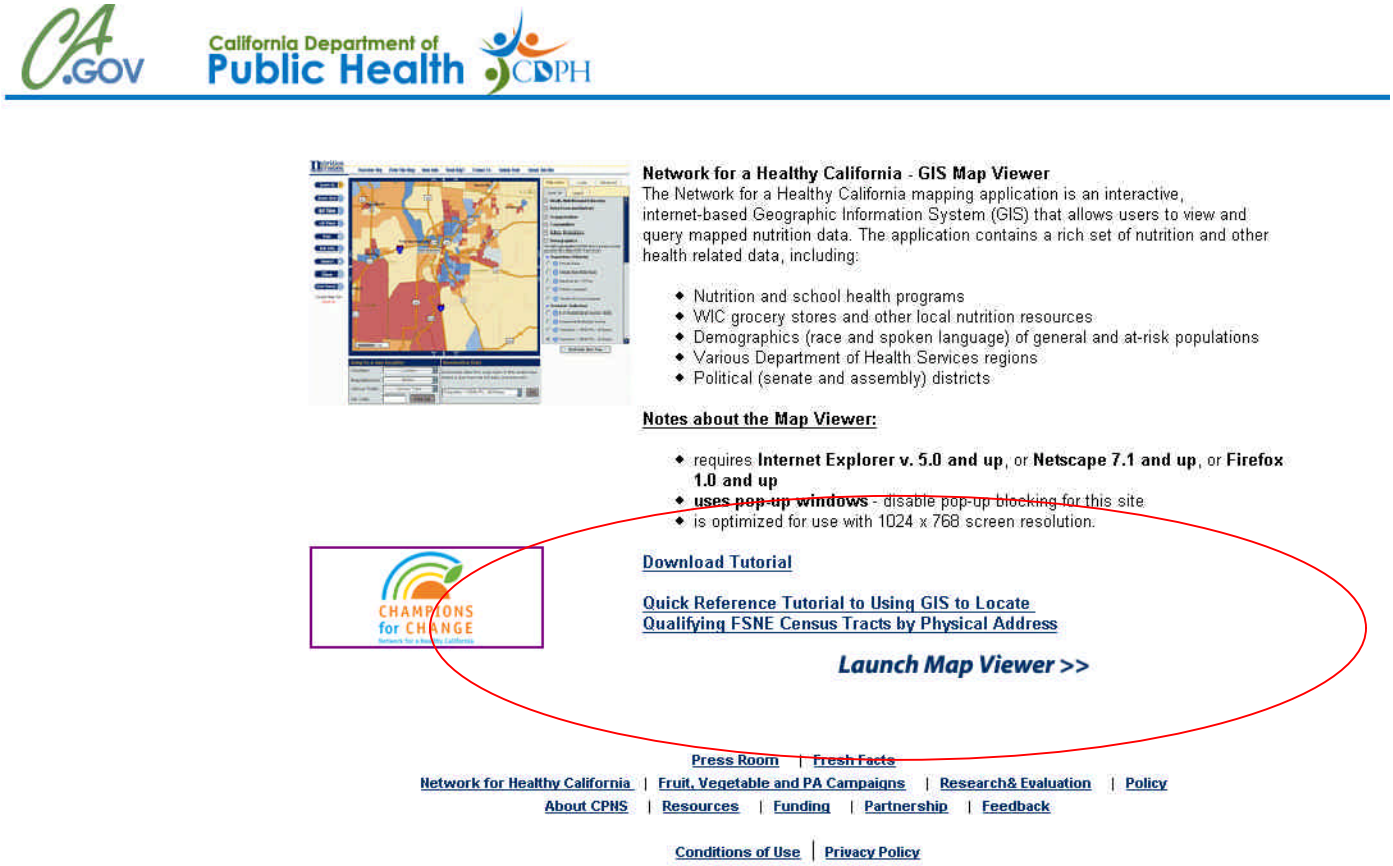
The Network GIS Map Viewer can be found at the following address:

http://www.cnngis.org

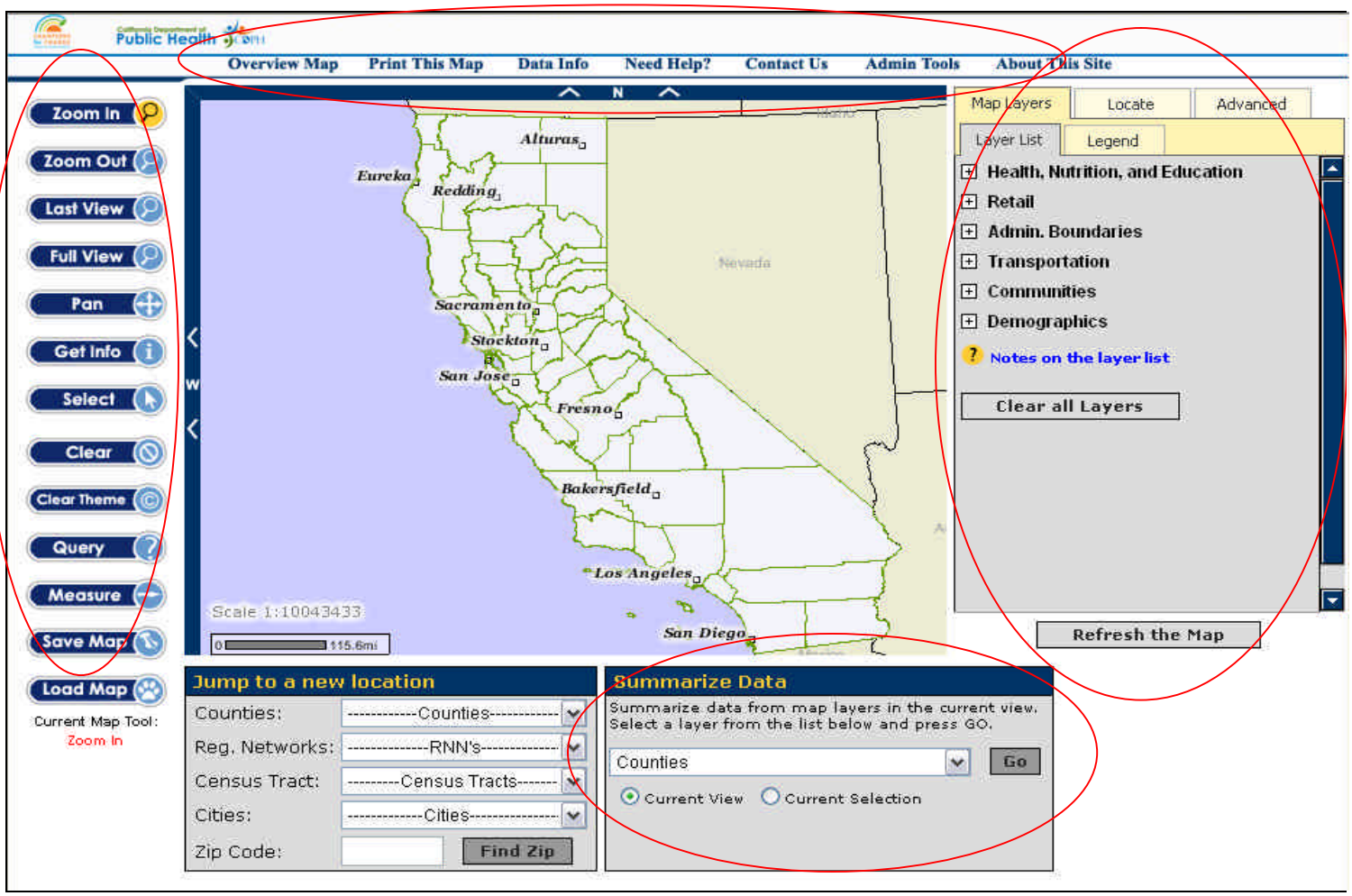
The Layout of the Site

After clicking on the URL above, you will find yourself at the entry page shown below:

Please read the “Notes about the Map Viewer” which contains important information about the compatibility and settings of your web browser. **Most importantly, you must not have pop-ups blocked for this site.**



After clicking the "***Launch Map Viewer***" link, a new browser window will open. It will take a few moments for all sections of the page to fully open. A diagram of each of these sections is shown below. We will cover each of these sections in detail in this document.

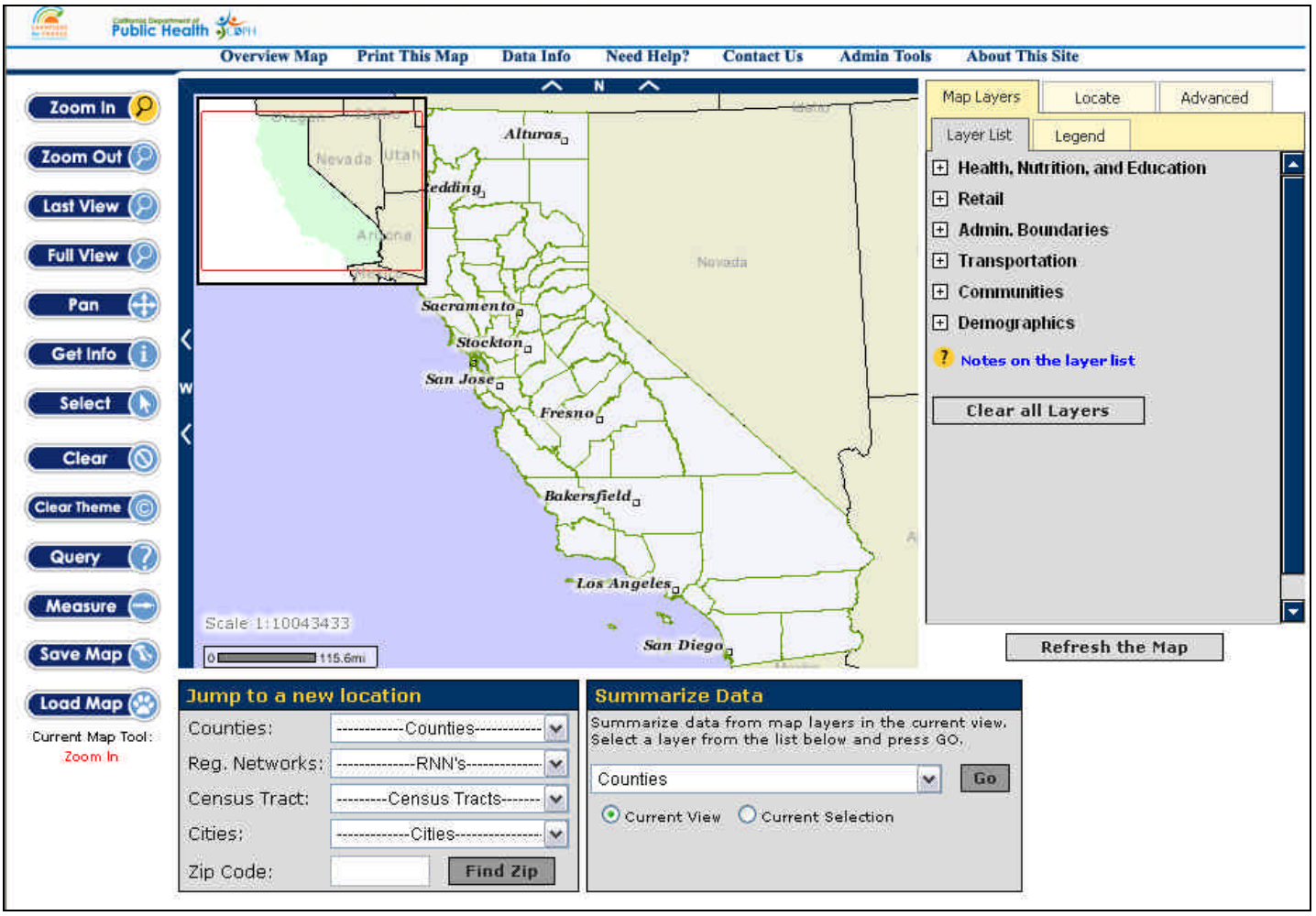


The Links Section

The following is a short description of the main links that run along the top of ***The Network*** GIS Map Viewer window.

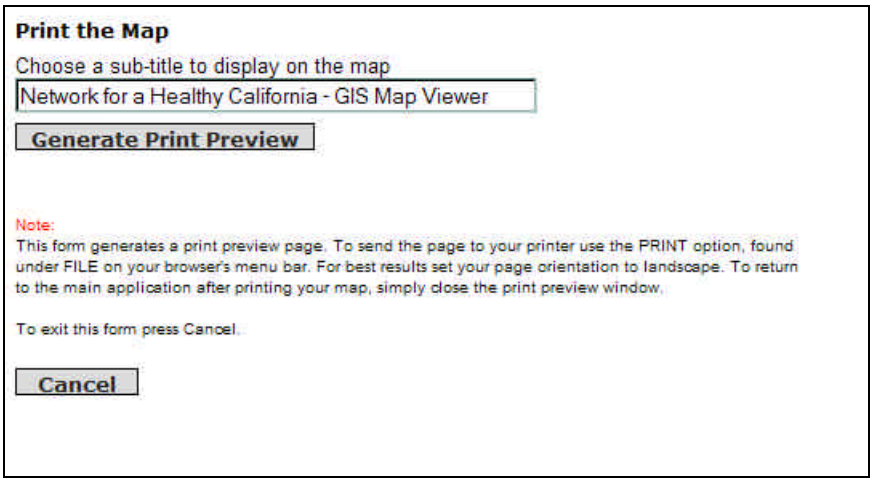
Overview Map:

By clicking the "***Overview Map***" link, you can show (or hide) a small reference map of California in the upper left-hand corner of the main map window (see image below). The red box within this reference map will encompass the area visible within the main map window, which is useful when you have used the "***Zoom In***" tool (described in the "Tools" section below).



Print This Map:

Clicking this link will open a new "Print" window where you can add a title to the map you have displayed in your browser, and view a print preview before printing. Further instructions can be found within the "Print" window.



Data Info:

Clicking this link will open a new browser window with a list of *Metadata* (information about the data layers) information. Each layer has its own description of data fields, summary of the layer contents and any information unique to that specific GIS layer. **It is a good idea to read these descriptions before accessing *The Network* GIS Viewer in order to understand what kind of data can be requested.**

This page contains the links to metadata - or information about the data - for the data layers in ***The Network*** GIS.

Data layers used in the application include base map layers such as county boundaries, highways, roads and streets, city names, various CDPH regional boundaries, State Assembly and Senate district boundaries, demographics for both Food Stamp Recipients and the general population, and channels for getting information to Food Stamp Recipients such as schools.

Data Layers

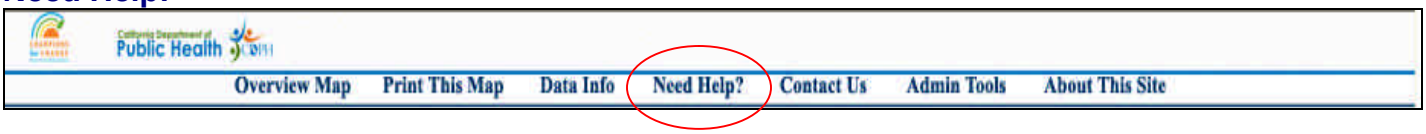
After School Snack Sites
Assembly Districts
California Association of Food Banks Members
California Local Health Departments
California Parks
California Retailers **UPDATED APRIL 2007!**
Certified Farmer's Markets
CHDP Nutrition Project
Selected California Health Interview Survey (CHIS) Indicators - 2003
Counties
Demographics
50% Free/Reduced Meals
First Five High Priority Elementary Schools
FitnessGram Results
Food Stamp Certified Vendors
Food Stamp Office Locations
Food Stamp Recipients
Head Start Agencies
Healthy Cities & Communities
Healthy Start Schools
LEAN Regions
Licensed Healthcare Facilities
Medical Service Study Areas (MSSA)
Power Play Regions
Population Centers
Preschools
Private Schools
Public Schools
Regional Network Regions and their Lead Agencies
Regional Network Lead Agencies and Subcontractors
- **Regional Network African American Lead Agencies**
- **Regional Network Latino Lead Agencies**
- **Regional Network Power Play Agencies**

Regional Network Local Incentive Awardees
Regional Network Special Projects
Regional Network Faith Community Outreach Special Project
Regional Network Local Food and Nutrition Education Projects
Regional Network Food Stamp Outreach Projects
School Health Centers
Senate Districts
Shape Schools
Summer Meal Service Sites
UC Cooperative Extension Sites
US Congressional Districts
Voluntary Health Organizations
WIC Agencies
WIC Clinics
WIC Vendors
Youth Organizations
ZIP Codes

Here is an example of one of the data info pages:

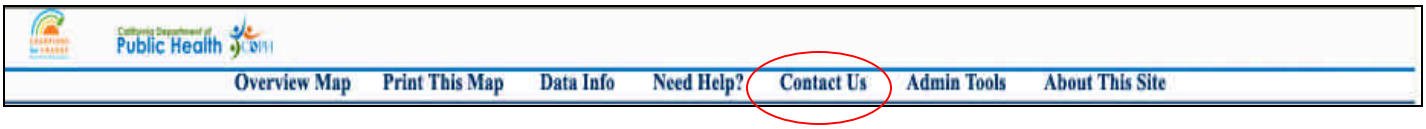
*GROCERY STORES AND FOOD MARKETS	General Grocery	
	Large Chain	Supermarket/grocery store chain with at least 10 stores
	Small Chain	Supermarket/grocery store chain with 5-9 stores
	Grocery, Other	Supermarket/grocery store that is independent or in a chain o < 5 stores; this will include all grocery stores not listed in any other category
	Other-COOP	A cooperative grocery store
	Other-Commisary	Commisary

Need Help:



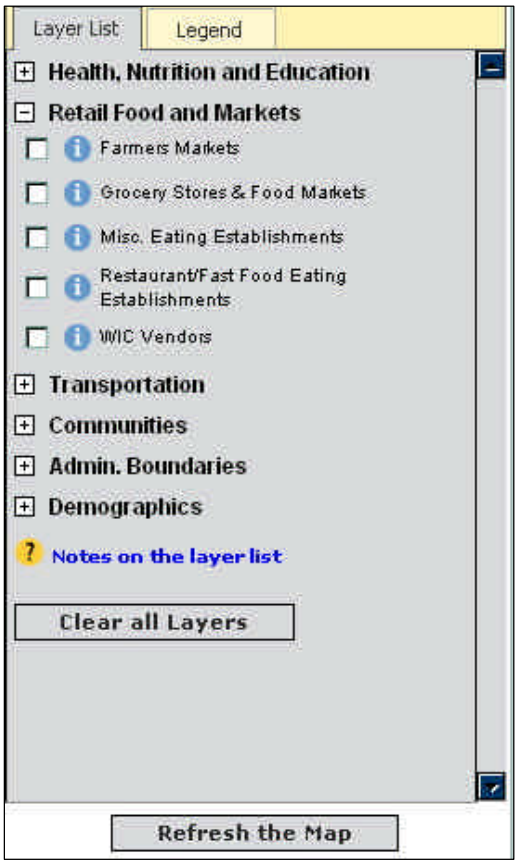
By clicking this link, you get access to a help page that is very similar to this document. Please use this for information on using all parts of ***The Network*** GIS Map Viewer website.

Contact Us:



Click this link if you are experiencing problems with the Mapping Application and require assistance, or have feedback to share. You can either send a note directly from this section (be sure to provide your email address if you want a reply), or call the phone number listed.

The Layer List



The "Layer List" is used to control which layers of data are visible on the map, and which layers are *active* for use with the "***Get Info***" and "***Select***" tools (see **Map Tools** section for more about the "***Get Info***" and "***Select***" tools).

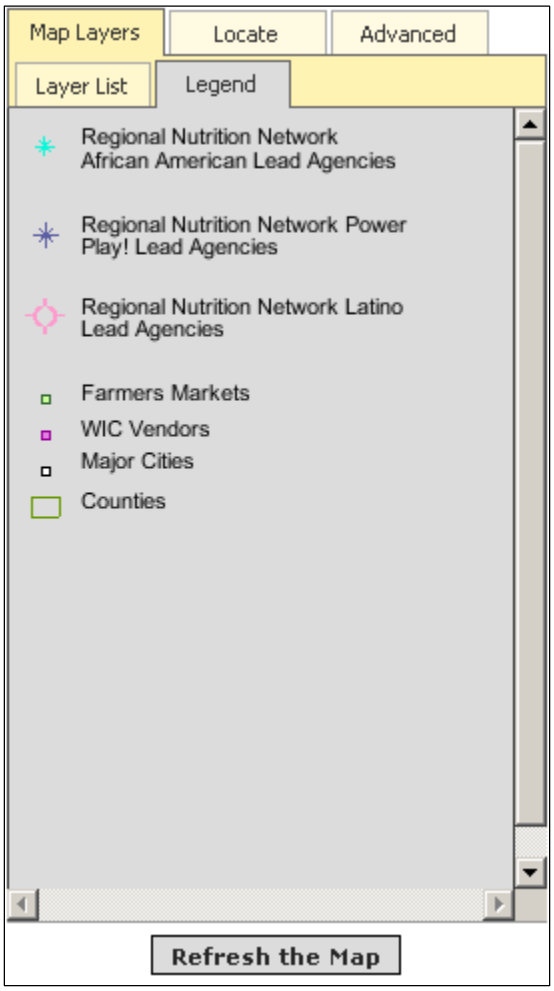
The map layers in the Map Viewer have been grouped by theme. For example, in the image shown at left there are 6 groupings starting with the "Health, Nutrition and Education" group and ending with the "Demographics" group. Within each grouping there are one or more map layers. Groups can be expanded/collapsed by clicking the plus/minus signs beside the group name.

Beside each layer name in the list there is a check box. The check box is used to control whether a layer is visible/invisible on the map. If the check box beside a layer is checked it indicates that the layer is currently visible on the map. When a layer name and its check box are grayed-out it indicates that the layer is not available at the current map scale. Zoom in/out on the map to make these layers available. **Checking or un-checking a layer's check box does not automatically update the layers visible on the map - you must click the "*Refresh the Map"* button to view your changes on the map. Note that you cannot remove a layer from the map if any part of that layer is *selected*- you must first click the "*Clear*" button on the left menu.**

If a map layer has the icon beside its name, that layer contains information that can be retrieved using the "***Get Info***" tool or the "***Select***" tool *once that layer is active*. To make a layer *active* for the "***Get Info***" or "***Select***" tool, simply click the icon next to the layer name. The icon will change to which indicates that it is active. At certain map scales you will see the icon next to some layers. This icon indicates that the layer is not visible at the current map scale, and cannot be activated until it is within a visible scale-range (use the "***Zoom In***" tool).

The Legend

The Legend is displayed by clicking on the "***Map Legend***" tab. The Legend displays the symbology for all of the **visible** layers on the map.



Map Tools

The following is a list of the map tools found on ***The Network*** GIS Map Viewer's interface, and a description of how each one is used.

The "***Zoom In***" tool is used to zoom in on an area within the map. The tool can be used in two ways. Simply clicking on any point on the map will zoom in on that area and center the map on that point. You can also select a specific area on which to focus the map. To select the area, click and hold the left mouse button while dragging the cursor to select the area you want to magnify, and then release the button. The selected area will be enlarged.

The "***Zoom Out***" tool is used to zoom out from the map to view a larger area. The tool can be used in two ways. Simply clicking on any point on the map will zoom out and center the map on that point. You can also select a specific area from which to zoom out. To select the area, click and hold the left mouse button while dragging the cursor to select the area you want to zoom out from, and then release the button. As a rule, a smaller selected area will result in a larger area being displayed when the mouse button is released.

The "***Last View***" button allows you to quickly revert to the previous map view.

The "***Full View***" button allows you to quickly zoom out to the map's *maximum extent*.

Panning is a useful function that allows you to move around the map without changing the scale. Think of it as shifting a paper map across a desktop in order to view a different portion of it. To use the "***Pan***" tool, select the "***Pan***" icon from the tool bar, then click and hold down the left mouse button on a point in the map. Drag the map to reveal the desired area, and then release the mouse button to display that area.

The "***Get Info***" tool allows you to view the attribute information of a feature or features on the map. Using this tool is a quick three-step process: first you must select a map layer by checking the box next to the layer of interest. Then you must make a map layer "active" by clicking on the icon of any selected (i.e., checked) layer. An “active” layer will be indicated by the icon. Finally, either click on a feature or draw a box around the feature(s) of interest. To draw a box around features, click and hold the left mouse button on the map, then drag the box to encompass the features of interest.

Note: Certain map scales may have the icon next to some layers. This icon indicates that the layer is not visible at the current map scale, and cannot be activated until it is within a visible scale-range (use "***Zoom In***" tool).

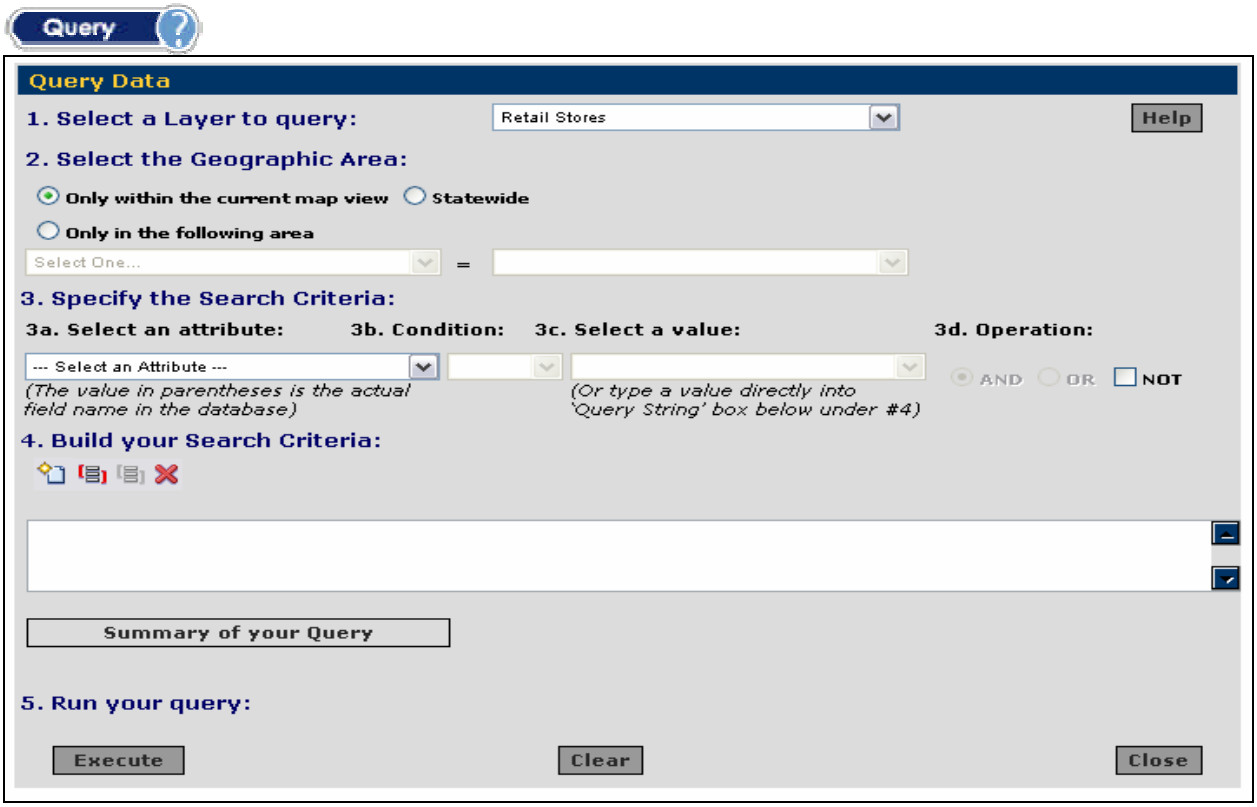
The "***Select***" tool allows you to select a feature or features on the map for use with the "***Buffering***" function (described below in the “Advanced Functions” section). Selecting items is a simple process: first you must select a map layer by checking the box next to the layer of interest. Then you must make a map layer "active" by clicking on the icon of any selected (i.e., checked) layer. An “active” layer will be indicated by the icon. Finally, either click on a feature or draw a box around the feature(s) of interest. To draw a box around features, click and hold the left mouse button on the map, then drag the box to encompass the features of interest. When the mouse button is released, features that were selected will have a light blue outline as is seen in the image,  .

A new functionality of the “***Select***” tool allows you to add features to the current selected feature or remove features to the current selected set. When new features are added to the map or if any of the map pan and zooming functions are used the selected features will remain highlighted with the light blue outline as shown above.

Note: Certain map scales may have the icon next to some layers. This icon indicates that the layer is not visible at the current map scale, and cannot be activated until it is within a visible scale-range (use "***Zoom In***" tool).

The "***Clear***" tool allows you to refresh the map by clearing a previously selected object or clearing a buffer that has been created on the map. Just click this button once and the map will refresh.

The "***Clear Theme***" tool is similar to the Clear tool above except that it is specifically used to clear the results from the Customized Theme Function, which is described in the **Thematic Mapping** section below. Just click this button once and the map will refresh.



The "***Query***" tool is a powerful way to create maps to your specifications, and to view and download (in Excel format) the data behind the maps. Click the "***Query***" button to launch the "***Query***" tool.

Once the "***Query***" tool page has appeared, select the layer you want to query (e.g., Retail Stores). Then select the area you would like to query -- the area within the current map view, statewide, or within an area defined in the layer (this option is not always available).

You will then select the criteria used in the query. The easiest way to do this is to click the menus and buttons within 3a, 3b, 3c, and 3d. Clicking on any menu value or button will transfer that value to the *query string box* under "4. Review your Search Criteria". That is, clicking on **Zip Code** (the *attribute*) then on **=** (the *operator*) then on the sample value **'95628-3908'** will place the terms **N_ZIP10 = '95628'** into the *query string box* as you click them (note that "N_ZIP10" is the name of the database field corresponding to "Zip Code").

Here is a brief description of each operator:

=	Equal to
>=	Greater than or equal to
<=	Less than or equal to
and	Used to specify required additional conditions
or	Used to specify optional additional conditions
like	Used when querying for similar values, or for querying unknown values
not	Can be used with the above operators to exclude values

Below are a few sample query strings that can be used with the *Retail Stores* layer:

N_ZIP10 = '95628-3908' will return stores within the 95628-3908 zip code.
N_ZIP10 NOT = '95628-3908' will return stores NOT within the 95628-3908 zip code.
N_ZIP10 LIKE '95628%' will return stores in the zip code 95628 independent of their +4 codes.
N_ZIP10 LIKE '956_8%' will return stores in zip codes 956**1**8, 956**2**8, 956**3**8, etc. A single underscore character is a *wildcard* used to represent *any single* character, while a single percent sign is a *wildcard* that represents *any characters of any length*.
N_ZIP10 LIKE '956%' AND NOT N_ZIP10 = '95628%' will return stores with zip codes beginning with *956* but excluding the zip code 95628. (Note that the attribute chosen [in this case, N_ZIP10] must be referenced for each operation, i.e., you must write "N_*ZIP10* LIKE" and "NOT N_*ZIP10*").

You have the option of constructing the query string by clicking on the menus and buttons in 3a, 3b, 3c and 3d, but you may also construct or edit the query string within the *query string box*. This is useful if you would like to use less than **<** and not less than or equal to **<=** (simply delete the **=** from within the *query string box*).

You may click the "***Summary of your Query***" button to make sure the selected layer, area, attribute, and criteria are set as intended.

Click the "***Execute***" button to run your query. Results will be shown on the query page below the query configuration area (query results can be sorted by any field by clicking the column heading of that field). A yellow outline will surround the map features that met the criteria specified in the query.

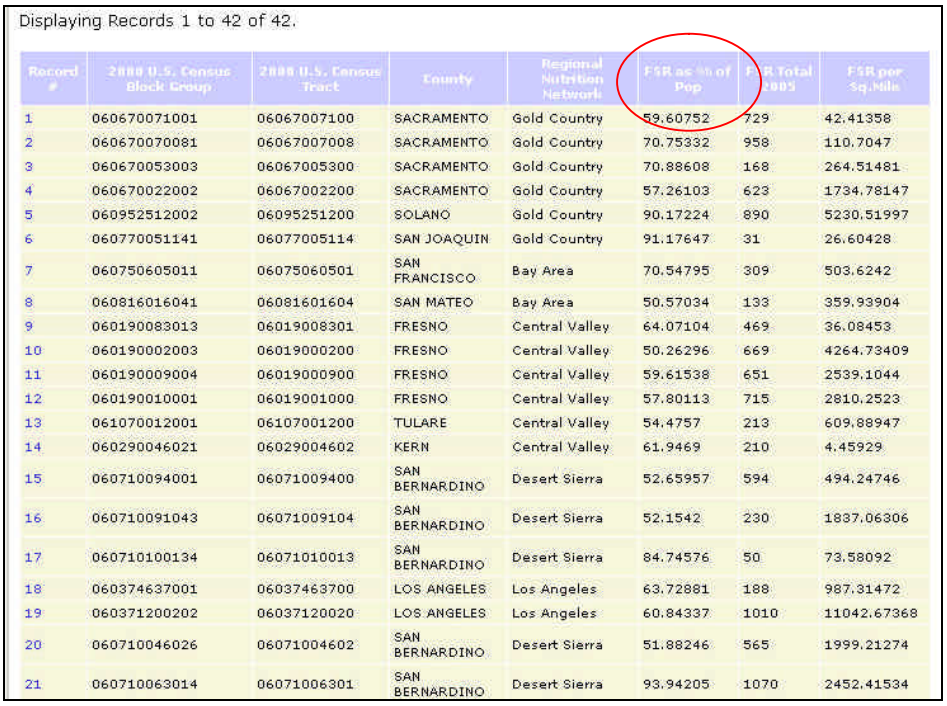
You can highlight and zoom to any individual record on the map by clicking on the record # link in the query results.

A real world example of using the "***Query***" tool can be found **here**.

Note for advanced users: If the sample values displayed in **3c** have single quotes (e.g. '95628'), the field contains *text values*. If the values don't have quotes, the field contains *numeric values*. Whereas numeric values are sorted by the value of the number (e.g., 1,2,3,4,5,100,200...), text values are sorted left to right, like ('1','10','100','2','225','30'...). Besides affecting the sorting of values, difference this affects how the values can be queried.

For Example: You want to know where the Food Stamp Proportion of the Population is 50% or greater. Because the field (FSR as % of Pop) is a text field (notice the single quotes around the values below), the following query string would be used:
GIS_PRFSR05 like '5_.%' or GIS_PRFSR05 like '6_.%' or GIS_PRFSR05 like '7_.%' or GIS_PRFSR05 like '8_.%' or GIS_PRFSR05 like '9_.%'

The results of the query can then be sorted by clicking the field heading.



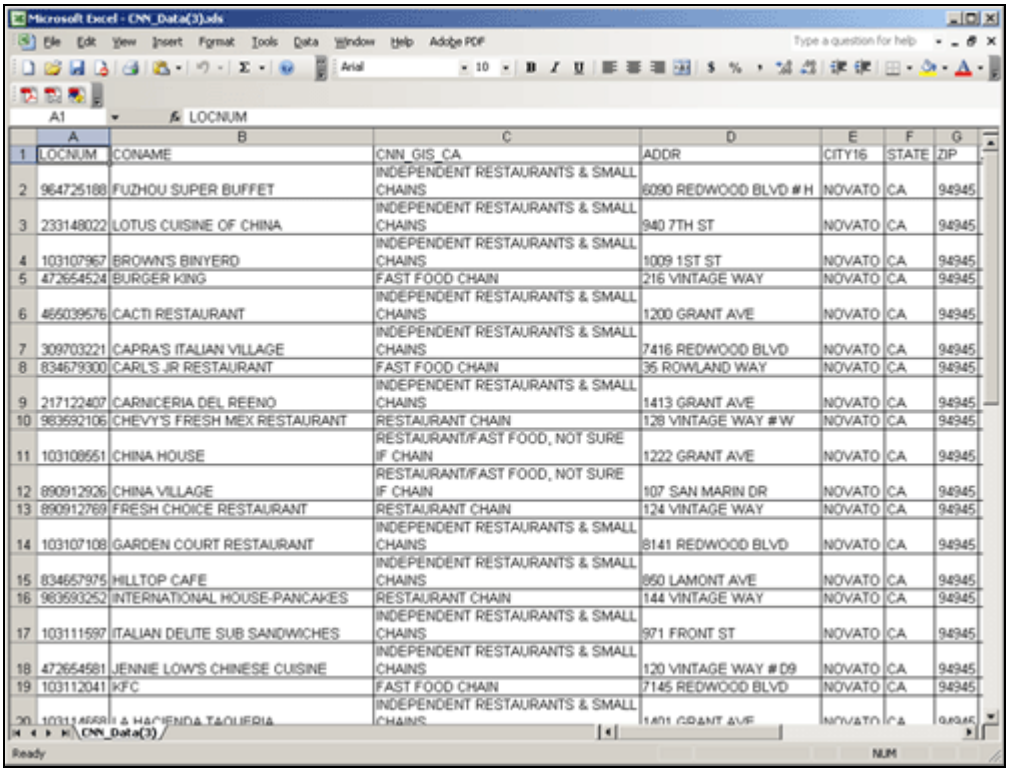
Displaying Records 1 to 42 of 42.

Record #	2000 U.S. Census Block Group	2000 U.S. Census Tract	County	Regional Nutrition Network	FSR as % of Pop	FSR Total 2005	FSR per Sq.Mile
1	060670071001	06067007100	SACRAMENTO	Gold Country	59.60752	729	42.41358
2	060670070081	06067007008	SACRAMENTO	Gold Country	70.75332	958	110.7047
3	060670053003	06067005300	SACRAMENTO	Gold Country	70.88608	168	264.51481
4	060670022002	06067002200	SACRAMENTO	Gold Country	57.26103	623	1734.78147
5	060952512002	06095251200	SOLANO	Gold Country	90.17224	890	5230.51997
6	060770051141	06077005114	SAN JOAQUIN	Gold Country	91.17647	31	26.60428
7	060750605011	06075060501	SAN FRANCISCO	Bay Area	70.54795	309	503.6242
8	060816016041	06081601604	SAN MATEO	Bay Area	50.57034	133	359.93904
9	060190083013	06019008301	FRESNO	Central Valley	64.07104	469	36.08453
10	060190002003	06019000200	FRESNO	Central Valley	50.26296	669	4264.73409
11	060190009004	06019000900	FRESNO	Central Valley	59.61538	651	2539.1044
12	060190010001	06019001000	FRESNO	Central Valley	57.80113	715	2810.2523
13	061070012001	06107001200	TULARE	Central Valley	54.4757	213	609.88947
14	060290046021	06029004602	KERN	Central Valley	61.9469	210	4.45929
15	060710094001	06071009400	SAN BERNARDINO	Desert Sierra	52.65957	594	494.24746
16	060710091043	06071009104	SAN BERNARDINO	Desert Sierra	52.1542	230	1837.06306
17	060710100134	06071010013	SAN BERNARDINO	Desert Sierra	84.74576	50	73.58092
18	060374637001	06037463700	LOS ANGELES	Los Angeles	63.72881	188	987.31472
19	060371200202	06037120020	LOS ANGELES	Los Angeles	60.84337	1010	11042.67368
20	060710046026	06071004602	SAN BERNARDINO	Desert Sierra	51.88246	565	1999.21274
21	060710063014	06071006301	SAN BERNARDINO	Desert Sierra	93.94205	1070	2452.41534

Downloading Query Data

To export the data returned by the query as an Excel spreadsheet (see example below), scroll down to the very bottom of the results window (or press the *End* key) and click the "***Download Data***" button. Select the directory where the file (CNN_Data.xls) will be saved and click OK.

Note: The "***Download Data***" button will **NOT** be available if the number of records returned is greater than 5000. Please re-focus your query to return 5000 or fewer records in order to download data.



	A	B	C	D	E	F	G
1	LOCNUM	CONAME	CNN_GIS_CA	ADDR	CITY16	STATE	ZIP
2	964725188	FUZHOU SUPER BUFFET	INDEPENDENT RESTAURANTS & SMALL CHAINS	6090 REDWOOD BLVD # H	NOVATO	CA	94945
3	233148022	LOTUS CUISINE OF CHINA	INDEPENDENT RESTAURANTS & SMALL CHAINS	940 7TH ST	NOVATO	CA	94945
4	103107967	BROWN'S BINYERD	INDEPENDENT RESTAURANTS & SMALL CHAINS	1009 1ST ST	NOVATO	CA	94945
5	472654524	BURGER KING	FAST FOOD CHAIN	216 VINTAGE WAY	NOVATO	CA	94945
6	466039576	CACTI RESTAURANT	INDEPENDENT RESTAURANTS & SMALL CHAINS	1200 GRANT AVE	NOVATO	CA	94945
7	309703221	CAPRA'S ITALIAN VILLAGE	INDEPENDENT RESTAURANTS & SMALL CHAINS	7416 REDWOOD BLVD	NOVATO	CA	94945
8	834679300	CARL'S JR RESTAURANT	FAST FOOD CHAIN	35 ROWLAND WAY	NOVATO	CA	94945
9	217122407	CARNICERIA DEL REENO	INDEPENDENT RESTAURANTS & SMALL CHAINS	1413 GRANT AVE	NOVATO	CA	94945
10	983592106	CHEVY'S FRESH MEX RESTAURANT	RESTAURANT CHAIN	128 VINTAGE WAY # W	NOVATO	CA	94945
11	103108551	CHINA HOUSE	RESTAURANT/FAST FOOD, NOT SURE IF CHAIN	1222 GRANT AVE	NOVATO	CA	94945
12	890912926	CHINA VILLAGE	RESTAURANT/FAST FOOD, NOT SURE IF CHAIN	107 SAN MARIN DR	NOVATO	CA	94945
13	890912769	FRESH CHOICE RESTAURANT	RESTAURANT CHAIN	124 VINTAGE WAY	NOVATO	CA	94945
14	103107108	GARDEN COURT RESTAURANT	INDEPENDENT RESTAURANTS & SMALL CHAINS	8141 REDWOOD BLVD	NOVATO	CA	94945
15	834657975	HILLTOP CAFE	INDEPENDENT RESTAURANTS & SMALL CHAINS	860 LAMONT AVE	NOVATO	CA	94945
16	983593252	INTERNATIONAL HOUSE-PANCAKES	RESTAURANT CHAIN	144 VINTAGE WAY	NOVATO	CA	94945
17	103111597	ITALIAN DELITE SUB SANDWICHES	INDEPENDENT RESTAURANTS & SMALL CHAINS	971 FRONT ST	NOVATO	CA	94945
18	472654581	JENNIE LOW'S CHINESE CUISINE	INDEPENDENT RESTAURANTS & SMALL CHAINS	120 VINTAGE WAY # D9	NOVATO	CA	94945
19	103112041	KFC	FAST FOOD CHAIN	7145 REDWOOD BLVD	NOVATO	CA	94945
20	103114668	LA HACIENDA TAQUERIA	INDEPENDENT RESTAURANTS & SMALL CHAINS	1401 GRANT AVE	NOVATO	CA	94945

The "***Measure***" tool is used to compute the distance (in miles) between two or more points on the map. To use the "***Measure***" tool, first click the "***Measure***" tool icon. Click on the map to draw a line using as many points as desired. Clicking the "***Run***" button will sum the distances between points to compute the total distance of the line drawn on the map. Once you have clicked the "***Run***" button to measure the distance, clicking again on the map will result in a new origin point for further measurements.

Use the "***Save Map***" button to save the current map, selected layers, and scale to your computer for later retrieval. Click on the button, and choose to save the XML file to a folder of your choice.

Use the "***Load Map***" button to open a map saved with the "***Save Map***" function. Click the button, browse to the location of the XML file, and click "Open".

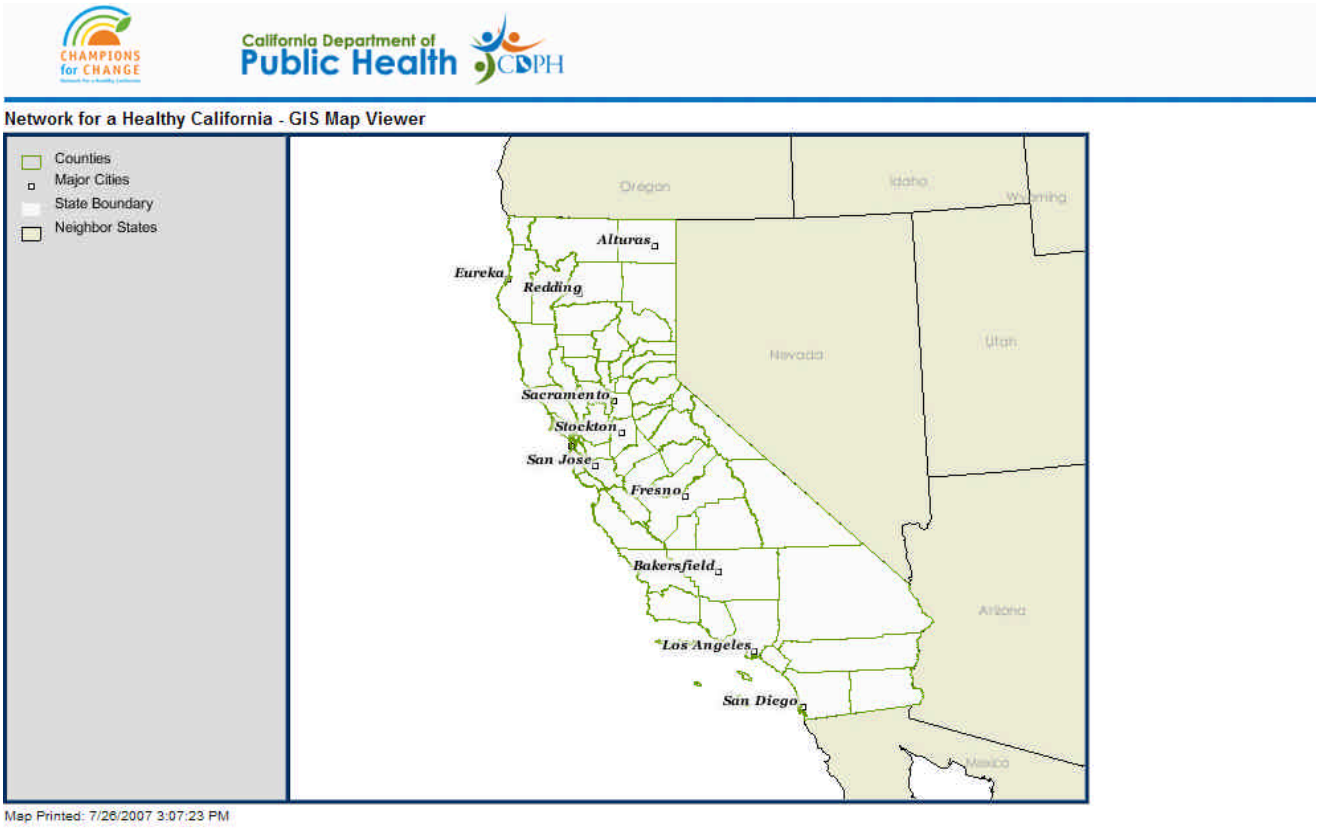
Saving Map Images

Save the Map to your computer as an Image:

1. Right-click with your mouse on the map
2. Choose "Save Picture As..." from the resulting menu
3. Use the "Save Picture" dialog to save the JPEG to your computer

How to Save the Map and Legend then Import Into MS Word:

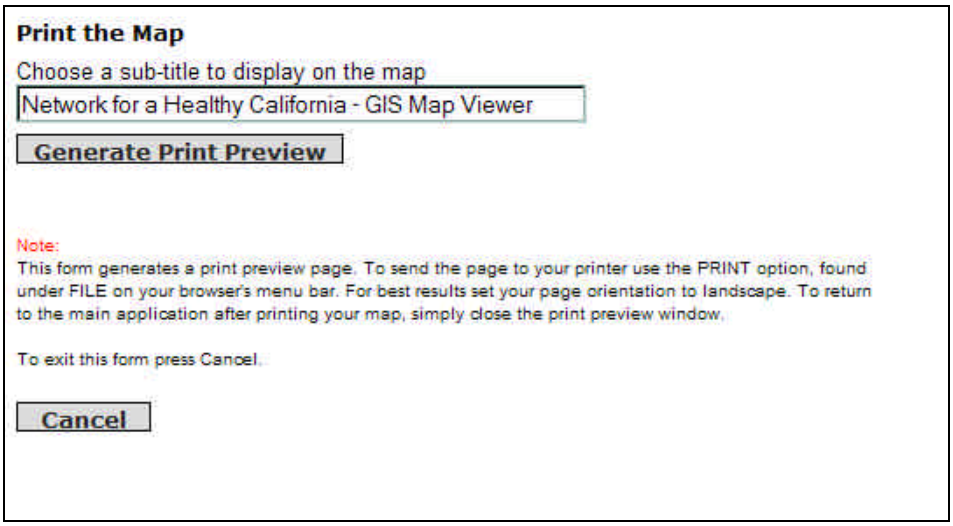
1. Click on "***Print This Map***" on the toolbar at the top of the page.
2. A window will pop up with directions on how to print (see image below), which you can use to personalize a title to label your map.
3. Click on "***Generate Print Preview***" to bring up a Print Preview page which will open in a new window. The legend and the map will be displayed as two separate images (see image below).
4. You can then right-click with your mouse on both the map and legend (one at a time) and use the "Save Picture" dialog to save the picture to your computer.
5. Locate the images on your computer, and copy and paste into a MS Word document.



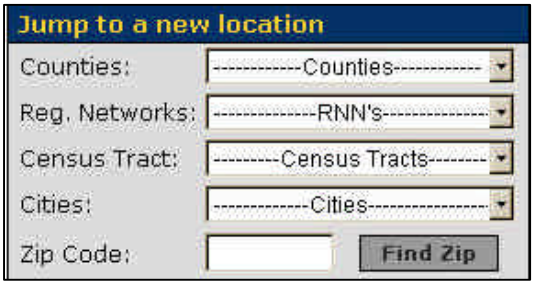
Printing the Map

Print the Map and the Legend

1. Click on "***Print This Map***" on the toolbar at the top of the page.
2. A window will pop up with directions on how to print. You can also add a custom title to your map.
3. Click on "***Generate Print Preview***" to bring up a Print Preview page. You can then use your PRINT option, found under FILE on your browser's menu bar, to send the map to your printer.

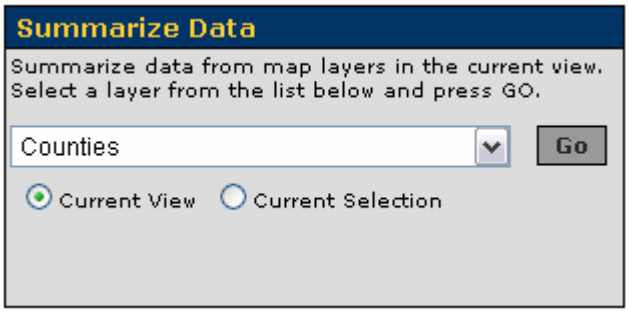


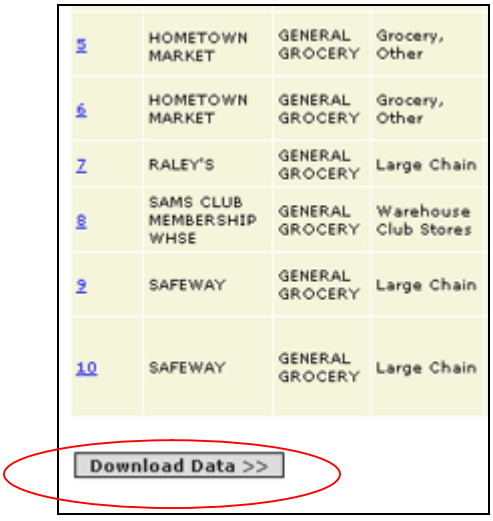
Jump to a New Location



The "Jump to a new location" area contains 4 list boxes listing all of California's Counties, Regional Networks (RNs), Census Tracts and Cities. Selecting a County, RN Region, Census Tract, or City from the list causes the map to zoom to the selected area. You may also enter a zip code to zoom to that area.

Summarizing and Downloading Data





This functionality allows you to view and download the data behind features that are within the **current map view** or within the **current selection**. To view features within the “Current view”, select one of the map layers listed in the list box and click "***Go***" (only layers visible on the map will appear in the list box). The map viewer will retrieve and return data from all of the features from the selected layer that fall within the current map view. Data can be sorted by clicking the field heading.

If the number of features returned is 5000 or fewer, you can download the data in Excel format by clicking on the "***Download Data***" button (see image at left) at the bottom of the results window. In the case that the number of features returned is greater than 5000 the "***Download Data***" button will **NOT** be visible. In this case, you can use the "***Zoom In***" tool to focus your search on a smaller area, then re-run the "***Summarize Data***" tool. Alternatively, you can use the "***Query***" tool to specify what records you are interested in (the query tool also has a 5000 record limit on data downloads).

An example of summarizing data in a real life scenario can be found **here**.

To view features within the “Current selection” first you need to use the “**Select**” tool to select the feature in the active layer. Click the “Select” tool on the left pane and then click on the feature (Please see the “**Map Tools**” section for instructions on how to use the “**Select**” tool).

Advanced Functions

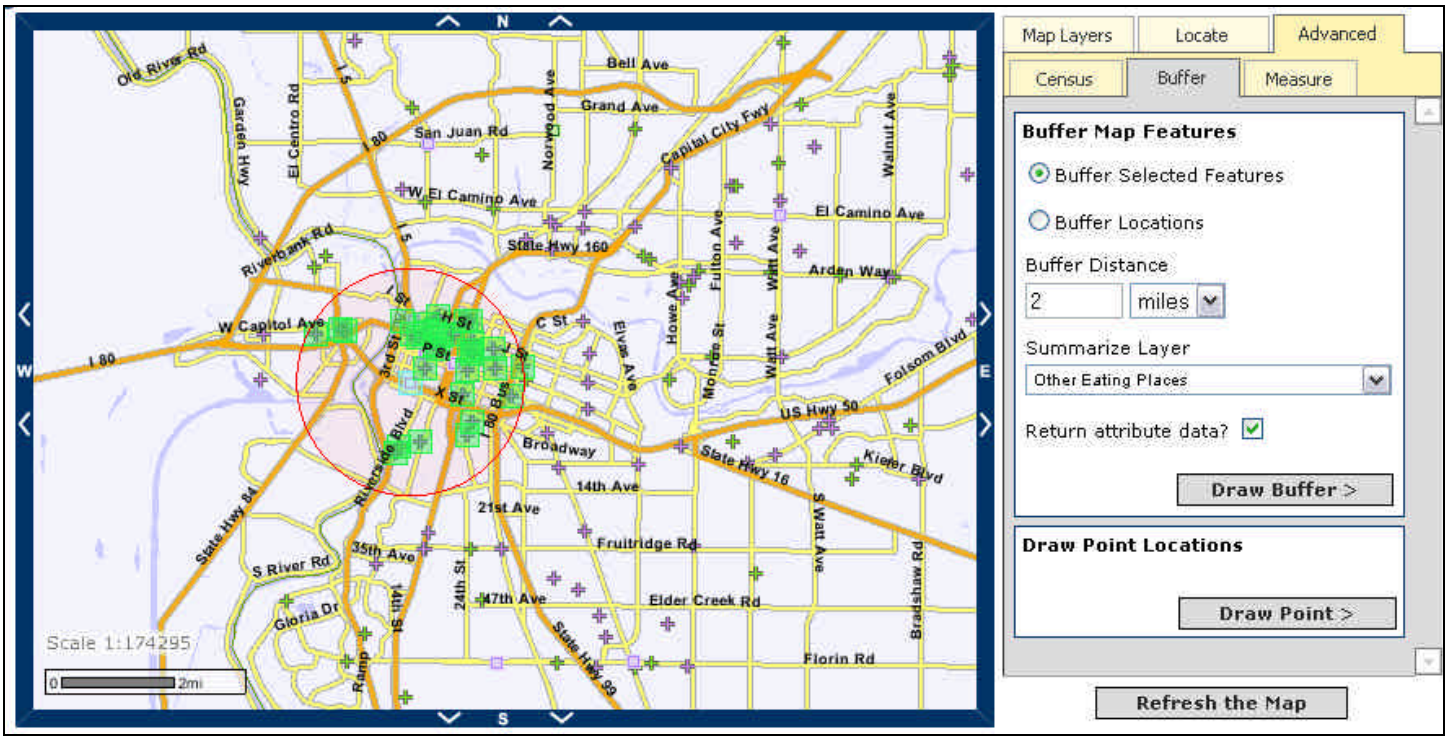
Querying and Downloading Data

Buffering

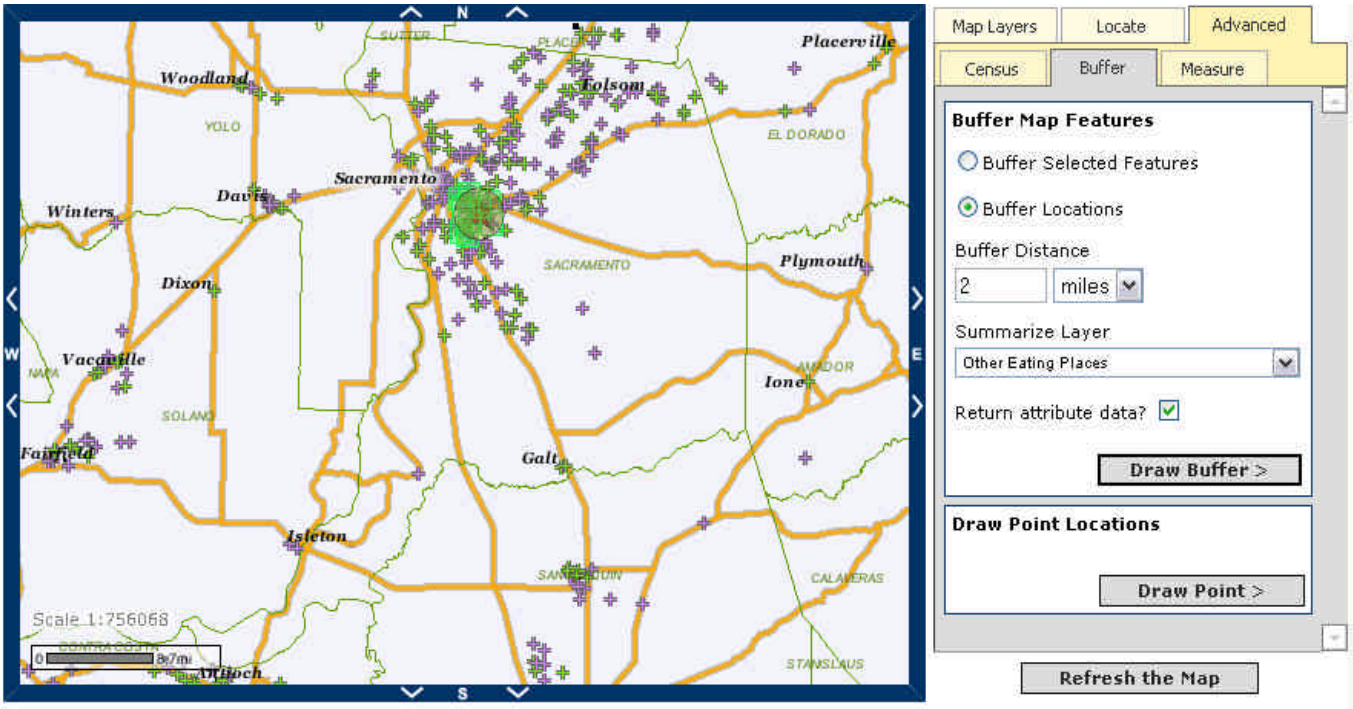
The "***Buffer***" function is used to select items on the map that are within a specified radius from another item.

1. First, select (by checking the box) and activate (by clicking) the layer of the item you want to create a buffer around. As an example, you may select "Farmers Markets". If this layer is not already visible on the map, click "***Refresh the Map***". Now select the item (e.g., the specific farmers market) you want to draw a buffer around by clicking the "***Select***" tool from the "Map Tools" and then clicking on the object on the map (you may need to zoom in). The object will now have a blue halo around it . Click on the "***Advanced***" tab, then click on the "***Buffer***" tab.

2. Next, make sure the "**Buffer Selected Features**" radio button is selected and then enter the desired buffer distance and select units (feet or miles) in the "Buffer Distance" options. Select the layer containing the features you wish to locate within the specified radius around the selected item. Click on "***Draw Buffer***". A circle with your specified distance as the radius will be created around your selected object and the items selected with "Summarize Layer" will be highlighted. In the image below, "Other Eating Places" are highlighted that are within 2 miles of the farmers market that was selected in step 1. Checking the "Return attribute data" box will create a popup window containing the data of the highlighted features. This is checked by default.



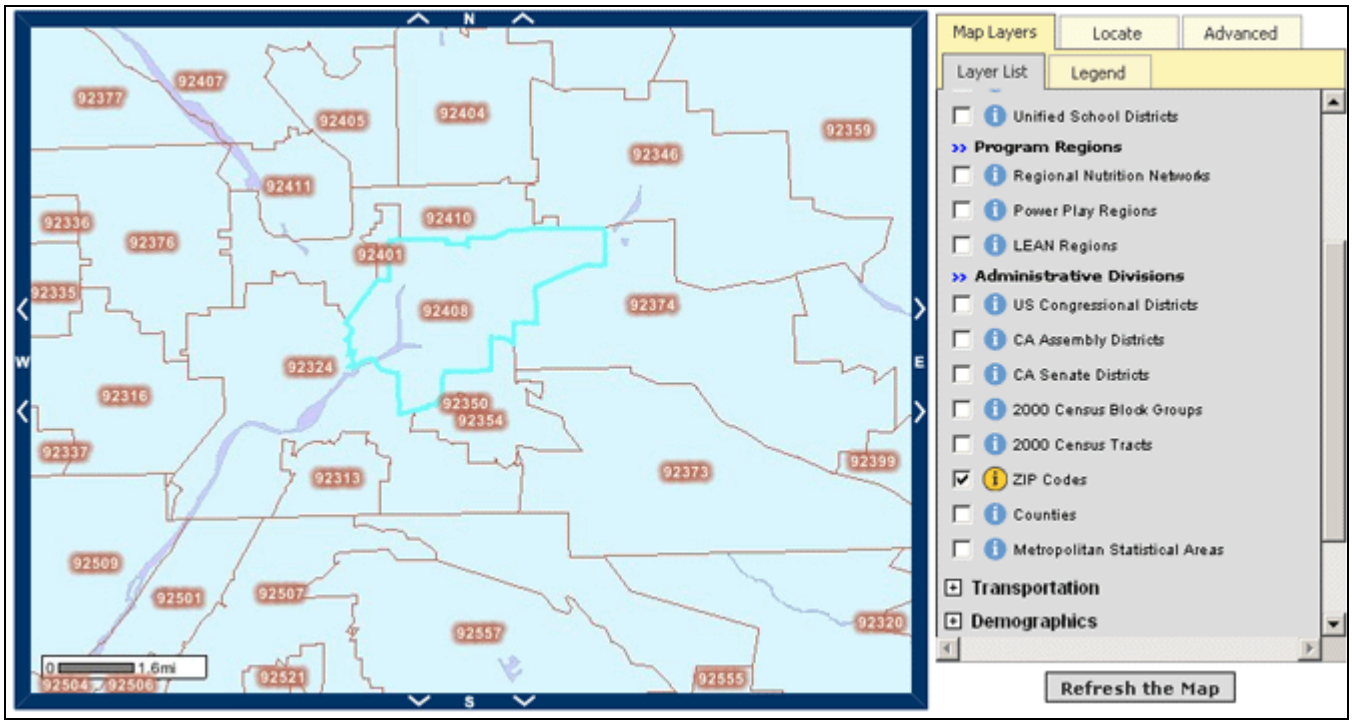
3. The buffer tool also allows you to click anywhere on the map to add a location to buffer. Simply click on “The “**Buffer Locations**” to activate this feature. Then click on “**Draw Point**” to draw the point location of interest. Your specified location is shown by the star symbol on the map**.** Then enter the desired buffer distance and select units (feet or miles) in the "**Buffer Distance**" options section. Select the layer containing the features you wish to locate within the specified radius around the selected item. Click on "***Draw Buffer***". A circle with your specified distance as the radius will be created around your selected object and the items selected with "Summarize Layer" will be highlighted. "Other Eating Places" are highlighted that are within 2 miles of the farmers market that was selected in step 1. Checking the "Return attribute data" box will create a popup window containing the data of the highlighted features. This is checked by default.



SPECIAL NOTE:

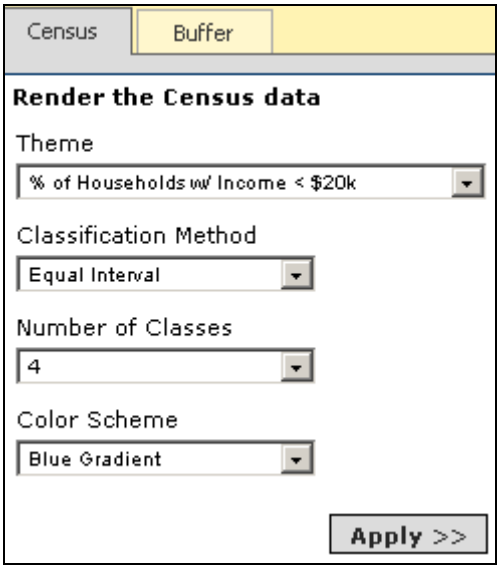
This is a simple way to approximately summarize data by areas for which we have not captured Census Data (i.e., zip codes). The 2000 U.S. Census Data doesn’t capture poverty data for actual zip codes but, instead, uses a *Zip Code Tabulation Area*, which may or may not correlate with an actual U.S. Post Office Zip Code. Therefore, one way to approximate census data for a zip code is to perform the following:

1. Select the zip code by choosing the **Zip Code** layer under **Administrative Divisions**



2. Buffer this zip code by **1 foot** to perform the actual selection set, and select the appropriate census variable ("Layer") in which you are interested and be sure to check the "Return Attribute Data" box. This will select for you all Census Tracts that *intersect* (touch) the zip code you have selected and return the attribute data for those Tracts.

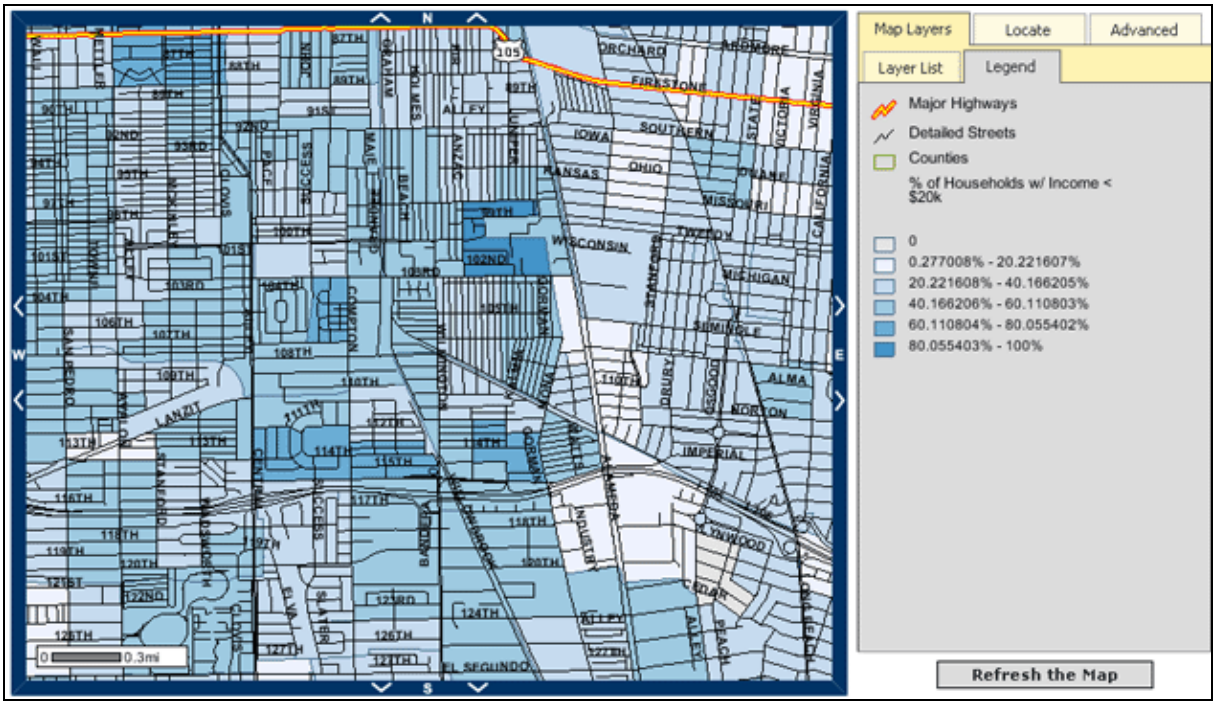
Thematic Mapping



Thematic mapping is used to display **levels** of data on a map. For example, a thematic map of *Hispanics as a % of Population* (the ***theme***), would show geographic areas where percentages of Hispanics fall into certain categories (0-20%, 21-40%, and so on).

On ***The Network*** GIS website, these categories correspond to a gradient of colors where values at one end of the scale are represented with a lighter shade of a color, and values at the other end are represented with a darker shade of a color. This makes it easy to see the differences in the theme on the map.

A thematic map of *% of Households w/ Income <$20k* can be seen below. The legend shows the color that corresponds to the category.



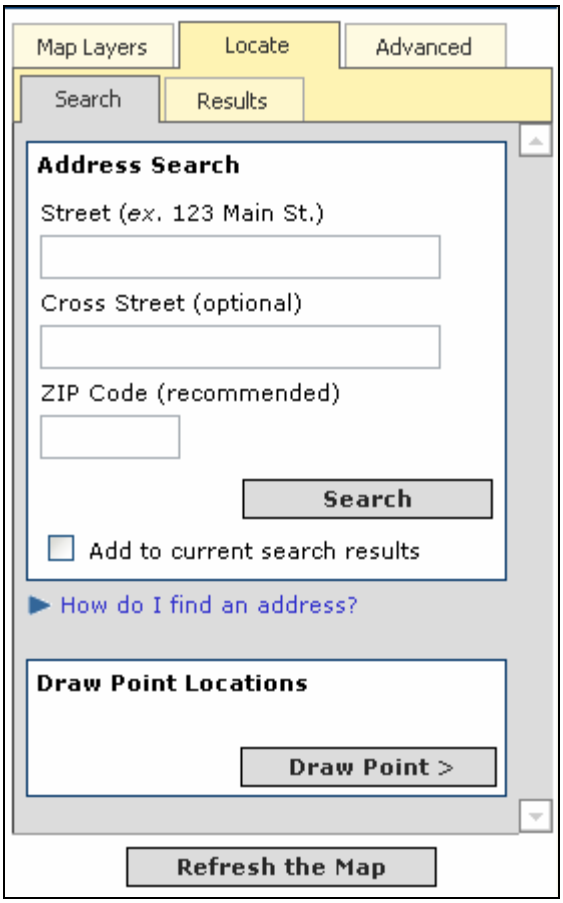
The most important process involved in producing a thematic choropleth map is the classification of data. There are many options available for classifying data. The spatial pattern shown by choropleth maps can be greatly altered by changing the classification method. It is also important to understand the nature of the data, such as: the measurement scale, the frequency distribution, outliers in the data, etc. The selection of classification methods depends on the nature of data and the purpose of the map. When classifying the data, the full range of the data should be included and the value ranges between classes should not overlap. The selection of the class number depends on several factors, but the minimum number of classes is normally considered to be four, the maximum number to be eleven and the optimum number is considered to be five or six.

We provide three of the most utilized, and easily understood, classification schemes here.

1. **Natural Breaks** is the implementation of this method in ESRI's **ArcGIS ArcView**. This method identifies breakpoints between classes using a statistical formula given by Jenk's optimization. This method is quite complex technically, but the principle of the Jenk's method is to minimize the sum of the variance within each of the classes. Namely, make the differences within each class as small as possible. **Natural Breaks** finds groupings and patterns inherent in your data.
2. In **Quantile** Classification method, each class contains the same number of spatial units. For example, if there are five classes, 20 percent of the units are in each class. **Quantile** Classification is also known as **Percentile** Classification. **Quantiles** are best suited for data that is linearly distributed. In other words, it is suitable for the data that does not have disproportionate numbers of spatial units with similar values.
3. The **Equal Interval** method divides the range of attribute values into equal sized sub-ranges (e.g., 0-20%, 21-40%, 41-60%, etc.). The features are classified based on those sub-ranges

To make a thematic map: simply select the theme, classification method, number of classes, and color scheme, then press "***Apply***".

Address Search

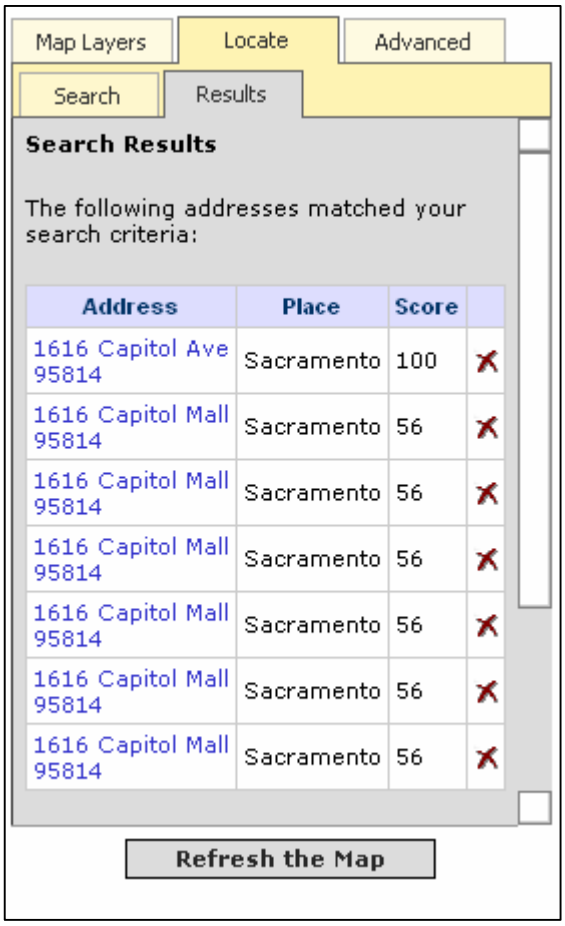


The "***Address Search***" function is used to find a specific street address or cross street location on the map.

1. Enter a street address into the first text box.
2. If you are looking for an intersection enter the name of the cross-street in the second text box.
3. For best results enter a ZIP Code into the third text box.
4. Click the "***Search***" button.

An added feature of the “Address Search” function allows you to display multiple search results on the map. To add an additional feature to your map, follow the instructions above again and then click on the box to the left of “**Add to current search results**”.

If you already know the location on the map of interest, you can use the “**Draw Point Locations**” function to mark the location with a star.



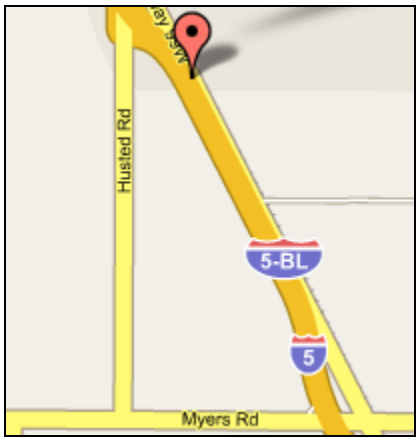
If the address is found, or a similar possible address is found, you will be presented with "**Search Results**" from which to zoom to on the map. Each potential match is given a score from 60 to 100, with 100 representing the highest match confidence. Each potential match is shown by the star symbol on the map**.** Click your desired choice from the list under "Address" and you will be zoomed to that location. By clicking the "✗" you can clear the other stars from the map that do not represent the location of interest.

You have the option to add the layers you want to see on the map before or after using the "Address Search" function as the star remains even when the map is refreshed. The star(s) can be removed from the map by clicking the "***Clear***" button.

Troubleshooting:

If the address is not found, it may be possible to locate it by specifying a nearby intersection and an appropriate zip code. In this example, we are trying to locate the following address which was not found using the "***Address Search***" feature: "2211 Old Highway 99W, Williams, CA 95987". The steps to locate this address are as follows:

1. Go to **Google Maps** and enter the address in the search box. In this case, Google Maps found the address. It is represented by the red marker in the image below.



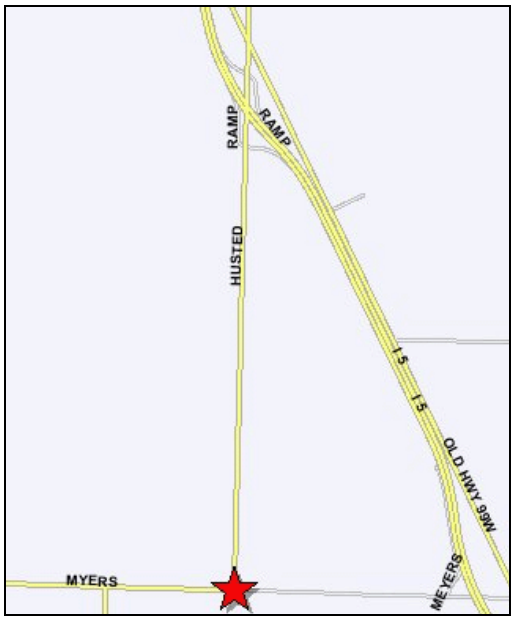
2. Locate an intersection near this point. We will use the intersection of "Husted" and "Myers".
3. In the "***Address Search***" box of ***The Network*** GIS Viewer website, enter "Husted" in the *Street* box and "Myers" in the *Cross Street* box, then enter "95987" in the *ZIP Code* box and click "***Search***".

Search Results

The following addresses matched your search criteria:

Address	Place	Score
MYERS RD 95987 95987 + HUSTED RD 95987 95987	WILLIAMS	74

The value in the **Score** column indicates how closely the address matches your search. Scores range from **60-100** with **100** representing the highest level of confidence.



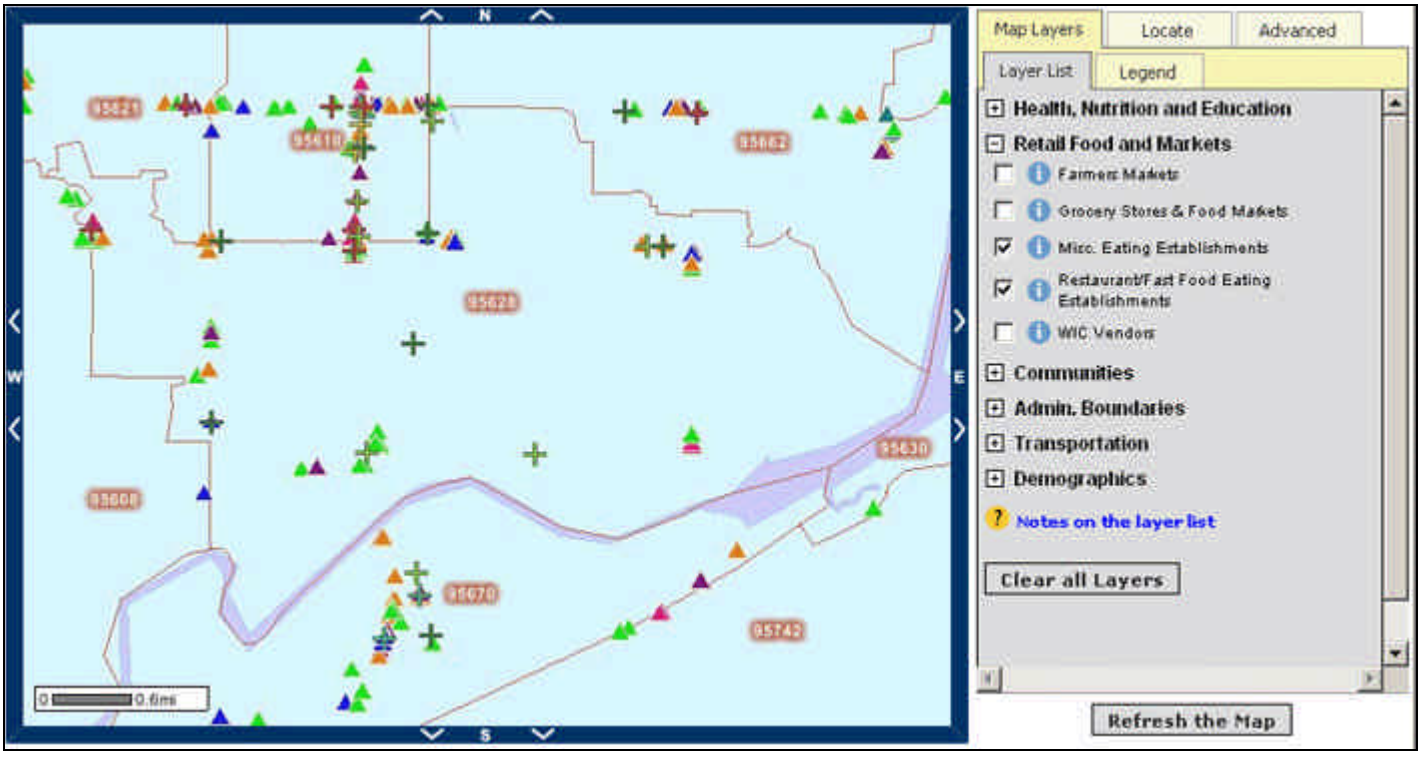
4. The search results will be displayed; click on the address to zoom to that area on the map. A red star marks the intersection. You can then use the "***Pan***" tool to move to the exact location as depicted on the Google map.

Real Life Scenarios

Goal: Identify the number and types of eating establishments in a specific area

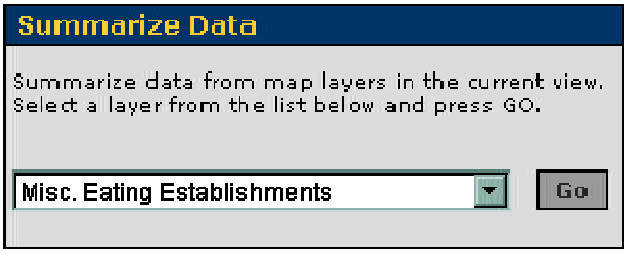
1. From “Layer List”, expand “Retail Food and Markets” and choose “Misc. Eating Establishments” and “Restaurant/Fast Food Eating Establishments” from the list of layers.

2. In the “Jump to a New Location” box at the bottom of the screen, enter a zip code to jump to a specific area that you want to focus on. In this example, we jumped to zip code 95628. You can now see the “Misc. Eating Establishments” and “Restaurant/Fast Food Eating Establishments” within that zip code.



3. At this point, you can use the "***Get Info***" tool to see the details of any feature (i.e., eating establishment) on the map. Be sure the layer of interest has been activated (by clicking the icon which will then change to).

4. To see and download the data behind the map, use the “Summarize Data” box at the bottom of the screen to select either the “Restaurant/Fast Food Eating Establishments” or “Misc. Eating Establishments” layers. Click on “***Go***” to bring up a summary of the data from the selected map layers from within the **current map view**. The results may be sorted by city name, zip code or other fields so that a count of the features of interest can be done.



An Alternative Approach Using the "*Query*" Tool

Another way to count and view data within a certain zip code is to use the "***Query***" tool. To use the "***Query***" tool to count the number of food retailers within a certain zip code:

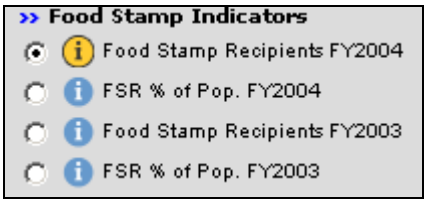
1. Click the "***Query***" button.
2. For "Choose a Layer to query", choose either “Restaurant/Fast Food Eating Establishments” or “Misc. Eating Establishments” (you must run a new query for each).
3. For "Select an attribute", choose "Zip". Click the "=" for "Choose an operator" then choose the zip code (e.g., 95628) from "Choose a sample value". In the "Review your Search Criteria" box, you should see "ZIP = 95628".
4. Click the "***Execute***" button to run your query. Scroll down to see the results of your query.

More info on the "***Query***" tool can be found **here**.

Goal: Find out how many food stamp recipients are near LIAs in your region

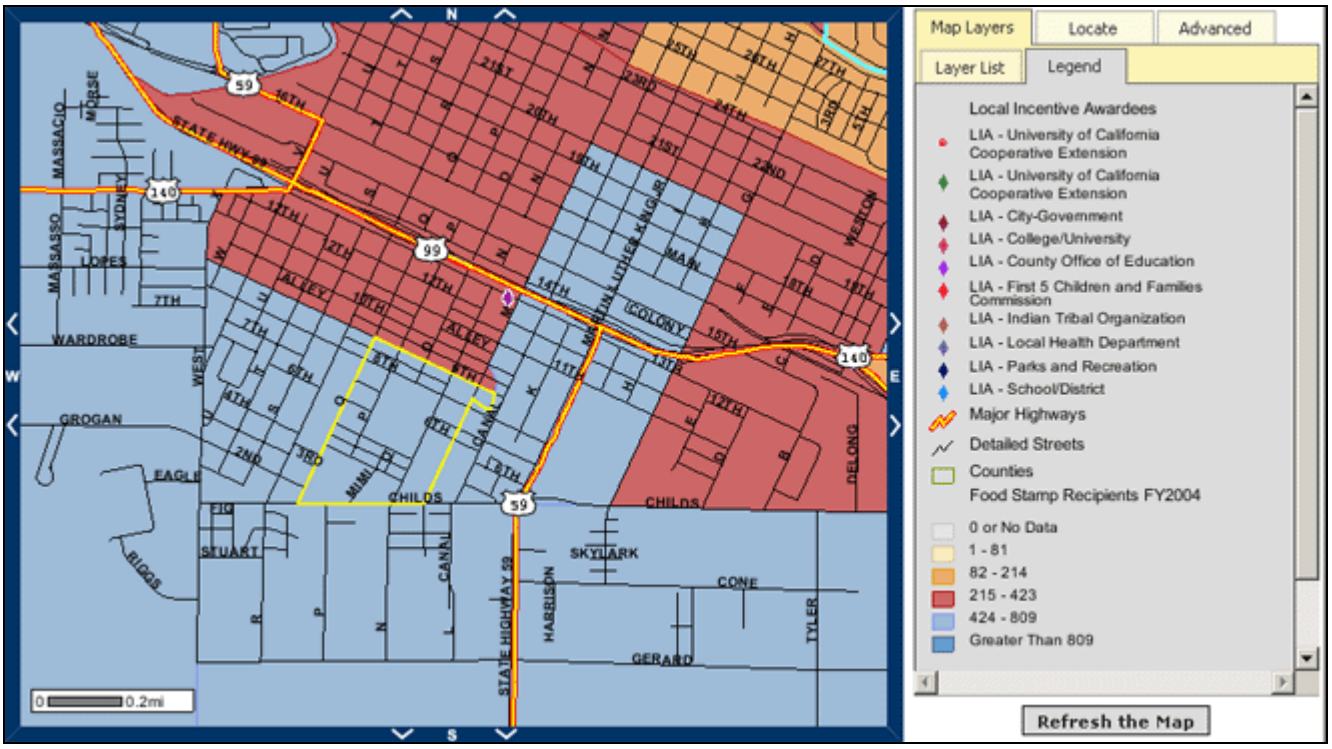
1. From “Layer List”, expand the "Health, Nutrition and Education" group (by clicking ⊞) and scroll down to " Network for a Healthy California Programs and Projects" then select “Local Incentive Awardees”.

2. Expand the “Demographics" group and select “Food Stamp Recipients FY2004” from the "Food Stamp Indicators" section. Activate the "Food Stamp Recipients 2004" layer by clicking the ⓘ.



Click on Refresh the Map. At this point, you may click on the “***Map Legend***” to see what the colors on the map represent. The legend is visible on the right side of the image below.

3. Use the “***Zoom In***” tool to select a specific area surrounding an LIA that you want to focus on. The map and legend will show you how many food stamp recipients are located *within a specified block group* are in a specific zip code and/or census tract surrounding the LIA you are viewing.



4. To obtain the specific numbers of food stamp recipients within certain block groups near the LIA, select the "***Get Info***" tool then click in the block group of interest. This will highlight the block group in yellow (see image above) and a new window will pop up that contains information about the block group and number of food stamp recipients. You may select multiple block groups by dragging a box around the area of interest using the "***Get Info***" tool. This will highlight each block group within the box drawn and pop up a new window with information about each block group.

Contact Us

If you have any questions about this application or need assistance please Email us using the ***Contact Us*** section or call us at 916-552-9918